



UNITED STATES PATENT AND TRADEMARK OFFICE

WU

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/691,913

10/23/2003

Mike Blossfeld

TRW(BCS)6721

6535

7590

07/01/2004

TAROLLI, SUNDHEIM, COVELL, & TUMMINO L.L.P.
1111 LEADER BLDG.
526 SUPERIOR AVENUE
CLEVELAND, OH 44114-1400

EXAMINER

GUSHI, ROSS N

ART UNIT

PAPER NUMBER

2833

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,913

Applicant(s)

BLOSSFELD, MIKE

Examiner

Ross N. Gushi

Art Unit

2833

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamashita.

Per claim 1, Yamashita discloses (see figure 2) a compliant pin adapted to be pressed into a through-hole of a printed circuit board and have electrical contact with opposing surfaces of a side wall of the through-hole, said compliant pin comprising: a portion insertable in the through-hole, said portion comprising spaced deflectable beam portions having outer surfaces spaced apart a distance greater than the spacing of the opposing surfaces of the side wall, said beam portions engaging the side wall and deflecting toward each other when said portion is inserted in the through-hole and providing a frictional engagement between said beam portions and the side wall, the frictional engagement providing a retention force for retaining said portion in the through-hole; said portion comprising an opening extending through said portion and defining inner surfaces of said beam portions opposite said outer surfaces, said inner surfaces consisting essentially of a plurality of blended cylindrical surfaces.

Per claim 10, Yamashita discloses a positioning portion comprising first and

second leg portions 13 positioned on laterally opposite sides of said portion, each of said legs having a surface for engaging a surface of the printed circuit board adjacent the through-hole and limiting insertion of said portion in the through-hole to help place said portion at a predetermined axial position in the through-hole.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, 11-19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Wurster.

Regarding claim 1, Johnson discloses (see figure 1) a compliant pin adapted to be pressed into a through-hole of a printed circuit board and have electrical contact with opposing surfaces of a side wall of the through-hole, said compliant pin comprising:

a portion insertable in the through-hole, said portion comprising spaced deflectable beam portions, said portion comprising an opening extending through said portion and defining inner surfaces of said beam portions opposite said outer surfaces, said inner surfaces consisting essentially of a plurality of blended cylindrical surfaces.

Johnson does not explicitly state that the outer surfaces are spaced apart a distance greater than the spacing of the opposing surfaces of the side wall. Wurster discloses a compliant pin and discusses the well known feature of outer surfaces 54

Art Unit: 2833

spaced apart a distance greater than the spacing of the opposing surfaces of the side wall, including beam portions engaging the side wall and deflecting toward each other when said portion is inserted in the through-hole and providing a frictional engagement between the beam portions and the side wall, the frictional engagement providing a retention force for retaining said portion in the through-hole.

At the time of the invention, it would have been obvious to have the Johnson compliant pin tail be wider than the hole width as taught in Johnson. The motivation for doing so would have been to frictionally engage the through hole walls as taught in Johnson and as is well known in the art.

Regarding claims 2, 3, 4, variations in relative dimensions, which do not specify a device which performs or operates any differently from the prior art, do not patentably distinguish applicant's invention. Gardner v. TEC Systems, Inc., 725 F.2d 1338 (Ct. App. Fed. Cir. 1984). Wurster discusses how the various thicknesses, radii, and dimensions can be varied to adjust the holding power of the pins, to minimize emissions and pickups, to adjust the contact area of between the board and pin. See Wurster columns 2-5. At the time of the invention, it would have been obvious to vary the thicknesses, radii, and other dimensions of the Johnson compliant section as desired to achieve the desired holding force and contact area.

Per claim 5, said inner surfaces of said beam portions each include a central cylindrical surface, said central cylindrical surfaces being convex and presented facing each other, said central cylindrical surfaces defining a central portion of said opening (see figure 1).

Regarding claims 6, 7, said central cylindrical surfaces help define central interface portions of each of said beam portions. Johnson does not show the outer surface. Wurster discloses that each interface portions including an interface surface formed on said outer surfaces 54 of said beam portions opposite the central surface of each respective beam portion, said interface surfaces having convex cylindrical configurations and being presented facing away from each other. At the time of the invention, it would have been obvious to form the Johnson outer faces as being convex as taught in Wurster. The suggestion or motivation for doing so would have been to provide a strong frictional fit and good electrical connection as taught in Wurster.

Per claim 8, the Johnson central cylindrical surfaces help define central interface portions of each of said beam portions, each of said interface portions including an interface surface formed on said outer surfaces of said beam portions opposite the central cylindrical surface of each respective beam portion, said interface portion of each of said beam portions having a cross-sectional area that is greater than a cross-sectional area of beam portions.

Per claim 9, the compliant pin has a longitudinal axis and a lateral axis extending perpendicular to the longitudinal axis, said cylindrical surfaces having axes that extend perpendicular to both the longitudinal axis and the lateral axis of said contact.

Claims 11-19 and 21 are rejected for the reasons pertaining to claims 1-9.

Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Wurster as in claim 11 in view of Yamashita as discussed regarding

Art Unit: 2833

claims 1 and 10. Johnson does not show legs. Yamashita discloses legs. At the time of the invention, it would have been obvious to include legs on the Johnson pin as taught in Yamashita. The suggestion or motivation for doing so would have been to limit insertion depth of the pin, as taught in Yamashita and as is well known in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ross Gushi whose telephone number is (571) 272-2005. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Paula A. Bradley, can be reached at 571-272-2800 extension 33. The phone number for the Group's facsimile is (703) 872-9306.



**ROSS GUSHI
PRIMARY EXAMINER**